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JMeier

PATENT
Our Docket: P-HP 3808

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Watson-Straughan et al.	Group Art Unit: 1621
Serial No: 09/632,928	Examiner: S. Barts
Filed: August 4, 2000	
For: TRIAMINE DERIVATIVE MELANOCORTIN RECEPTOR LIGANDS AND METHODS OF USING SAME	

Commissioner for Patents
Washington, D.C. 20231

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C., 20231 on February 12, 2003.

David I. Spolter

David I. Spolter, Reg. No. 36,933

February 12, 2003
Date

RESPONSE TO OFFICE ACTION

Responsive to the Office Action mailed August 13, 2002, entry of the following Amendments and Remarks is respectfully requested. A response was initially due by November 13, 2002. However, a petition for extension, requesting an extension of three months, or until February 13, 2003, along with the corresponding extension fee, is submitted herewith. Accordingly, this response is timely filed.

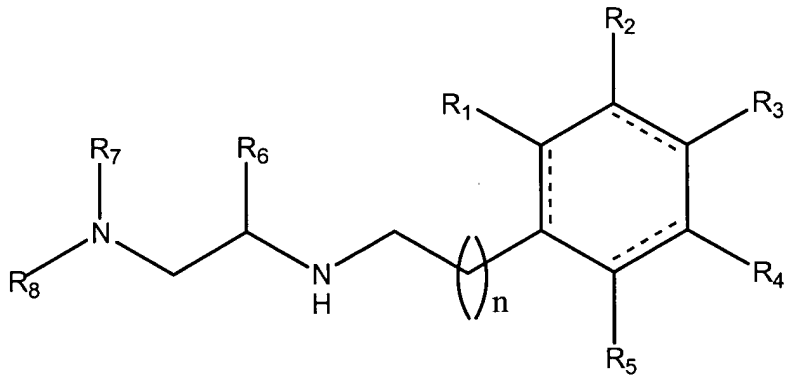
I. AMENDMENTS

Clean version

Please cancel claims 2 and 20 to 41 without prejudice.

Please amend the claims as follows:

1. (Amended) A compound of the formula:



wherein:

the dotted lines indicate that the depicted ring is selected from the group consisting of phenyl and cyclohexyl;

n is 0, 1 or 2;

R_1 to R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, nitro, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results;

R_6 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_{11} to C_{16} naphthylalkyl and C_{11} to C_{16} substituted naphthylalkyl;

where R_7 is absent, R_8 together with the attached nitrogen depicted in the above formula form a substituted heterocycle or a substituted cyclic C_3 to C_7 heteroalkylene, wherein at least one of said substitution is the formula -D-E, wherein D may be absent or present and, if present, is

selected from the group consisting of C_1 to C_6 alkylene and C_1 to C_6 substituted alkylene; and E is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino group; and

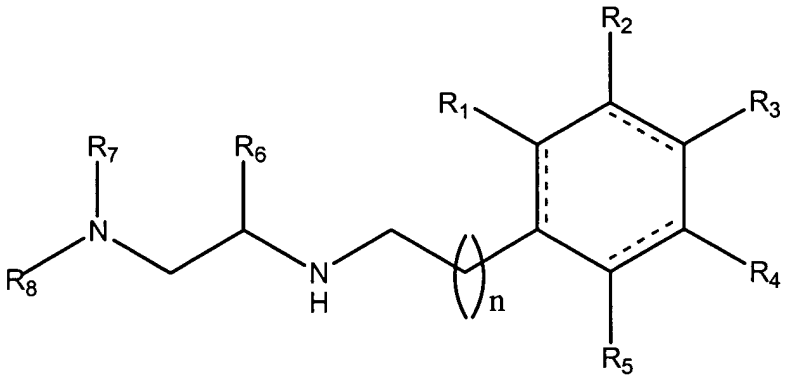
where R_7 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl and C_1 to C_6 substituted alkyl, R_8 is the formula X-CH-Y, wherein the attached nitrogen depicted in the above formula is attached to the carbon atom of the formula X-CH-Y, and wherein X is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl, and Y is the formula $-(CH_2)_n-Z$, wherein n is 1 to 6 and Z is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino;

wherein, when a) the depicted ring is phenyl, and b) R_1 to R_5 and R_7 are each hydrogen and c) R_8 is the formula X-CH-Y, where X is benzyl and Y is $-CH_2$-amino, then R_6 is not benzyl; or

a pharmaceutically-acceptable salt thereof.

Please add the following claims:

43. (New) A compound of the formula:



wherein:

the dotted lines indicate that the depicted ring is selected from the group consisting of phenyl and cyclohexyl;

n is 0, 1 or 2;

R_1 to R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, nitro, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl,

substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results;

R_6 is selected from the group consisting of C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_{11} to C_{16} naphthylalkyl and C_{11} to C_{16} substituted naphthylalkyl;

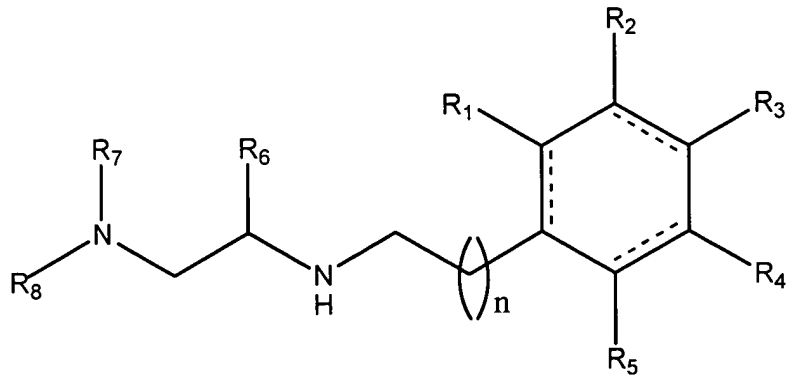
where R_7 is absent, R_8 together with the attached nitrogen depicted in the above formula form a substituted heterocycle or a substituted cyclic C_3 to C_7 heteroalkylene, wherein at least one of said substitution is the formula -D-E, wherein D may be absent or present and, if present, is selected from the group consisting of C_1 to C_6 alkylene and C_1 to C_6 substituted alkylene; and E is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino group; and

where R_7 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl and C_1 to C_6 substituted alkyl, R_8 is the formula X-CH-Y, wherein the attached nitrogen depicted in the above formula is attached to the carbon atom of the formula X-CH-Y, and wherein X is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl, and Y is the formula $-(CH_2)_n-Z$, wherein n is 1 to 6 and Z is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino;

wherein, when a) the depicted ring is phenyl, and b) R_1 to R_5 and R_7 are each hydrogen and c) R_8 is the formula X-CH-Y, where X is benzyl and Y is $-CH_2$-amino, then R_6 is not benzyl; or

a pharmaceutically-acceptable salt thereof.

44. (New) A compound of the formula:



wherein:

the dotted lines indicate that the depicted ring is selected from the group consisting of phenyl and cyclohexyl;

n is 0, 1 or 2;

R_1 to R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, nitro, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results;

R_6 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12}

phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_{11} to C_{16} naphthylalkyl and C_{11} to C_{16} substituted naphthylalkyl;

where R_7 is absent, R_8 together with the attached nitrogen depicted in the above formula form a substituted heterocycle or a substituted cyclic C_3 to C_7 heteroalkylene, wherein at least one of said substitution is the formula -D-E, wherein D may be absent or present and, if present, is selected from the group consisting of C_1 to C_6 alkylene and C_1 to C_6 substituted alkylene; and E is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino group; and

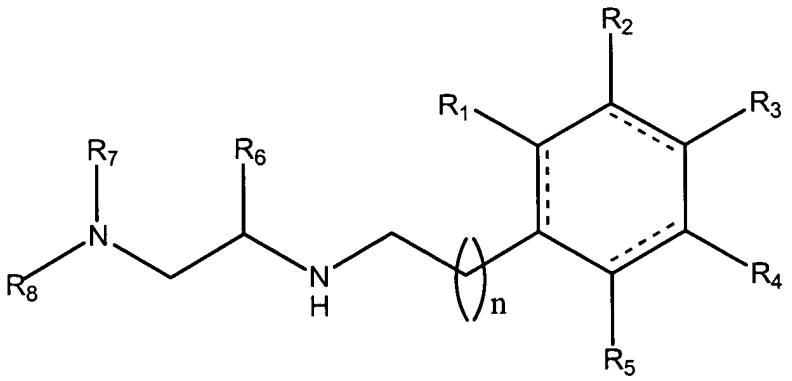
where R_7 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl and C_1 to C_6 substituted alkyl, R_8 is the formula X-CH-Y, wherein the attached nitrogen depicted in the above formula is attached to the carbon atom of the formula X-CH-Y, and wherein X is selected from the group consisting of a C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl, and Y is the formula $-(CH_2)_n-Z$, wherein n is 1 to 6 and Z is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino;

wherein, when a) the depicted ring is phenyl, and b) R_1 to R_5 and R_7 are each hydrogen and c) R_8 is the formula X-CH-Y,

where X is benzyl and Y is -CH_2-amino, then R_6 is not benzyl; or

a pharmaceutically-acceptable salt thereof.

45. (New) A compound of the formula:



wherein:

the dotted lines indicate that the depicted ring is selected from the group consisting of phenyl and cyclohexyl;

n is 0, 1 or 2;

R_1, R_2, R_4 and R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, nitro, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7

cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; R_3 is selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results;

R_6 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12}

phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_{11} to C_{16} naphthylalkyl and C_{11} to C_{16} substituted naphthylalkyl;

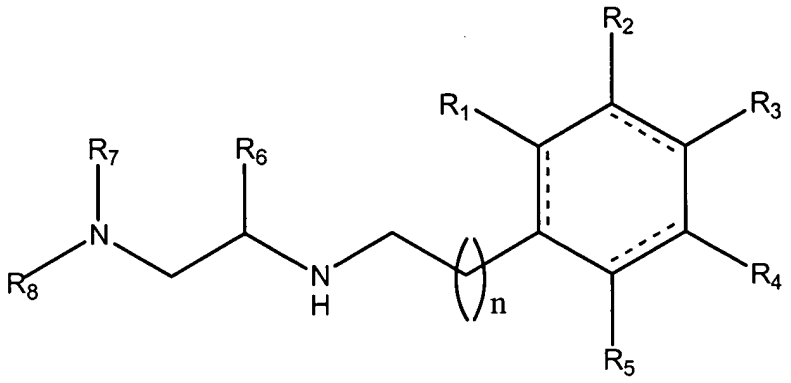
where R_7 is absent, R_8 together with the attached nitrogen depicted in the above formula form a substituted heterocycle or a substituted cyclic C_3 to C_7 heteroalkylene, wherein at least one of said substitution is the formula -D-E, wherein D may be absent or present and, if present, is selected from the group consisting of C_1 to C_6 alkylene and C_1 to C_6 substituted alkylene; and E is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino group; and

where R_7 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl and C_1 to C_6 substituted alkyl, R_8 is the formula X-CH-Y, wherein the attached nitrogen depicted in the above formula is attached to the carbon atom of the formula X-CH-Y, and wherein X is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl, and Y is the formula -$(CH_2)_n$-Z, wherein n is 1 to 6 and Z is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; or

a pharmaceutically-acceptable salt thereof.

46. (New) The compound of claim 45, wherein: R_1 to R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results.

47. (New) A compound of the formula:



wherein:

the dotted lines indicate that the depicted ring is selected from the group consisting of phenyl and cyclohexyl;

n is 1 or 2;

R_1 to R_5 are, independently, selected from the group consisting of a hydrogen atom, halo, hydroxy, protected hydroxy, nitro, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_3 to C_7 cycloalkyl, C_3 to C_7 substituted cycloalkyl, C_5 to C_7 cycloalkenyl, C_5 to C_7 substituted cycloalkenyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_1 to C_6 alkoxy, C_1 to C_6 substituted alkoxy, phenoxy, substituted

phenoxy, C_1 to C_6 alkylthio, C_1 to C_6 substituted alkylthio, C_1 to C_6 alkylsulfonyl, C_1 to C_6 substituted alkylsulfonyl, phenylthio, substituted phenylthio, phenylsulfonyl, substituted phenylsulfonyl, amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino; and when any one of adjacent position pairs R_1 and R_2, R_2 and R_3, and R_3 and R_4 and R_4 and R_5 together form a moiety selected from the group consisting of phenyl, substituted phenyl, heterocycle and substituted heterocycle, said moiety fused to the phenyl ring depicted in the above formula such that a bicyclic ring results;

R_6 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, C_{11} to C_{16} naphthylalkyl and C_{11} to C_{16} substituted naphthylalkyl;

where R_7 is absent, R_8 together with the attached nitrogen depicted in the above formula form a substituted heterocycle or a substituted cyclic C_3 to C_7 heteroalkylene, wherein at least one of said substitution is the formula -D-E, wherein D may be absent or present and, if present, is selected from the group consisting of C_1 to C_6 alkylene and C_1 to C_6 substituted alkylene; and E is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino group; and

where R_7 is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl and C_1 to C_6 substituted alkyl, R_8 is

the formula X-CH-Y, wherein the attached nitrogen depicted in the above formula is attached to the carbon atom of the formula X-CH-Y, and wherein X is selected from the group consisting of a hydrogen atom, C_1 to C_6 alkyl, C_1 to C_6 substituted alkyl, C_7 to C_{12} phenylalkyl, C_7 to C_{12} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl, and Y is the formula -$(CH_2)_n$-Z, wherein n is 1 to 6 and Z is selected from the group consisting of amino, protected amino, (monosubstituted)amino, protected (monosubstituted)amino and (disubstituted)amino;

wherein, when a) the depicted ring is phenyl, and b) R_1 to R_5 and R_7 are each hydrogen and c) R_8 is the formula X-CH-Y, where X is benzyl and Y is -CH_2-amino, then R_6 is not benzyl; or

a pharmaceutically-acceptable salt thereof.

II. REMARKS

Applicants wish to thank the Examiner for kindly indicating that claims 15 to 19 are allowable subject matter.

Before the amendments made herein, claims 1 to 42 were pending. Claims 2 and 20 to 41 have been canceled herein without prejudice. Claims 43 to 47 have been added herein. Accordingly, after entry of the amendments made herein, claims 1, 3 to 19 and 42 to 47 will be pending.